Table 3. Frequently Asked Questions from Patients to Enhance Colorectal Cancer Quality

1. What is your adenoma detection rate?
2. Is the bowel preparation quality described?
3. Annual fecal immunochemical test (FIT)–fecal DNA every 3 years
4. Flexible sigmoidoscopy every 10 years (or every 5 years)
5. Do you use split-dosing of bowel preparations?
6. What is your cecal intubation rate?

Available tests not currently recommended:

Tier 3:
- Septin 9
- CT colonography
- Flexible Sigmoidoscopy
- Capsule Colonoscopy

Chocks of the endoscopy report after the procedure:
- This will reveal if preparation was adequate to ensure effective examination.
- This demonstrates that the full extent of the colon was examined.
- It should be ≥25% overall or ≥30% for male patients and ≥20% for female patients.

Table 4. USMSTF Ranking of Current Colorectal Cancer Screening Tests

**Table 5. USMSTF Recommendations for Persons With High-Risk Family Histories Not Associated With Polyposis Syndromes**

<table>
<thead>
<tr>
<th>Family History</th>
<th>Recommended screening</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family Colon Cancer Syndrome X</td>
<td>Colonoscopy every 3–5 years beginning 10 years before the age at diagnosis of the youngest affected relative.</td>
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<tr>
<td>Colonoscopy or an advanced precursor lesion (advanced adenoma or sessile serrated polyp ≥10 mm in size or dysplastic) diagnosed in a single first-degree relative at age ≥60 years or two first-degree relatives at any age</td>
<td>Begin screening at age 40 years – tests and intervals are per average-risk screening recommendations. (Table 6)</td>
</tr>
</tbody>
</table>

Colorectal Cancer Screening

Selecting a Treatment Regimen

Visit gastro.org/guidelinapp to learn about the AGA Clinical Guidelines App. Available for download on the iTunes and Google Play Store.

**Abbreviations**

AGA, American Gastroenterological Association Inc.; CRC, colorectal cancer; FIT, fecal immunochemical test; USMSTF, U.S. Multi-Society Task Force on Colorectal Cancer

**References**

We are moderately confident that the true effect lies close to the estimate of the effect.

Effective screening should begin at age 50 years in average-risk persons, but earlier age should be considered for higher-risk individuals. For the Patient

For the Clinician

Most individuals in this situation would want the recommended colorectal cancer screening test, whereas a small proportion would not.

Most individuals in this situation would want to be substantially different from the estimate of the effect. The true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different.

The majority of individuals in this situation would want the suggested colorectal cancer screening test, whereas a small proportion would not.

Different choices will be appropriate for different patients.

Decision aids may be useful in helping individuals making decisions consistent with their values and preferences.

Clinicians should expect to spend more time with patients when working toward a decision.

The USMSTF recommends that screening begin in average-risk persons at age 50 years (Strong; Moderate Quality of Evidence).

The USMSTF suggests that screening begin in African Americans at age 45 years (Weak; Low Quality of Evidence).

The USMSTF suggests against Septin 9 for CRC screening (Weak; Low Quality of Evidence).

The USMSTF recommends that sequential offers of screening tests, offering multiple screening options, and risk-stratified screening are all reasonable approaches to offering screening (Weak; Low Quality of Evidence).

The USMSTF recommends colonoscopy every 10 years or annual FIT as first-tier options for screening average-risk persons for colorectal neoplasia (Strong; Moderate Quality of Evidence).

The USMSTF recommends that physicians performing screening colonoscopy measure quality, including the adenoma detection rate (Strong; High Quality of Evidence).

The USMSTF recommends that physicians performing FIT monitor quality (Strong; Low Quality of Evidence). The recommended quality measurements for FIT programs are detailed in a prior publication.

The USMSTF recommends CT colonography every 5 years or FIT–fecal DNA every 3 years (Strong; Low Quality of Evidence) or flexible sigmoidoscopy every 5–10 years (Strong; High Quality of Evidence) in patients who refuse colonoscopy and FIT.

The USMSTF suggests that capsule colonoscopy (if available) is an appropriate screening test when patients decline colonoscopy, FIT, FIT–fecal DNA, CT colonography, and flexible sigmoidoscopy (Weak; Low Quality of Evidence).

The USMSTF suggests that patients without prior screening should be considered for screening up to age 85, depending on consideration of their age and comorbidities (Weak; Low Quality of Evidence).

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Our con.

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Key Points

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<tbody>
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<td>The relative benefits, risks, and costs of 2 or more options are presented.</td>
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Table 2. Histologic Classification of the Two Major Classes of Colorectal Polyps

I. Conventional adenomas

a. Dysplasia grade
   i. High-grade
e   ii. Low-grade
b. Villousity
   i. Tubular
   ii. Tubulovillous
   iii. Villous

II. Serrated lesions

a. Hyperplastic polyp (not considered precursor)
b. Sessile serrated polyp
   i. Without cytologic dysplasia
   ii. With cytologic dysplasia
c. Traditional serrated adenoma

Figure 1. Endoscopic Photographs of Conventional Adenomas and Sessile Serrated Polyps

(A) Small (8-mm diameter) conventional adenoma. The red lines are surface blood vessels.

(B) A portion of a 46-mm advanced conventional adenoma — one of the targets of all screening tests. The prominent blood vessel pattern is, again, visible.

(C) A conventional adenoma with a focus of invasive cancer. The prominent blood vessel pattern of a conventional adenoma is visible over the lesion except in the ulcerated area. The cancer is located at the ulcer (arrow).

(D) A sessile serrated polyp without cytologic dysplasia. Note the absence of blood vessels on the surface.

(E) A sessile serrated polyp (visualized in narrow-band imaging) with multiple foci of dysplastic villous (yellow arrows). The dysplastic areas have the blood vessel pattern (and the histologic features) of an adenoma. The white arrows point to non-dysplastic portions of this sessile neoplasia.

(F) A sessile serrated polyp with invasive cancer. White arrows designate the residual sessile serrated polyp, whereas yellow arrows indicate the ulcerated malignant portion of the lesion.
### Diagnosis

- Colorectal cancer (CRC) screening should begin at age 50 years in asymptomatic persons.
- Colonoscopy every 10 years and annual fecal immunochromatographic test (FIT) are currently the first considerations for screening.
- A risk-stratified approach is also appropriate, with FIT screening in populations with an estimated low prevalence of advanced neoplasia and colonoscopy screening in high prevalence populations.

#### GRADE Strength of Recommendations and Implications

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#### Key Points

- We are very confident that the true effect lies close to the estimate of the effect.
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#### Figure 1. Endoscopic Photographs of Conventional Adenomas and Sessile Serrated Polyps

(A) Small (8 mm diameter) conventional adenoma. The red lines are surface blood vessels. (B) A portion of a 40 mm advanced conventional adenoma — one of the targets of all screening tests. The prominent blood vessel pattern is, again, visible. (C) A conventional adenoma with a focus of invasive cancer. The prominent blood vessel pattern of a conventional adenoma is visible over the lesion except in the ulcerated area. The cancer is located at the ulcer's (arrow). (D) A sessile serrated polyp without cytologic dysplasia. Note the absence of blood vessels on the surface. (E) A sessile serrated polyp (visualized in narrow-band imaging) with multiple foci of cytologic dysplasia (yellow arrows). The dysplastic areas have the blood vessel pattern (and the histologic features) of an adenoma. The white arrows point to non-dysplastic portions of the sessile serrated polyp. (F) A sessile serrated polyp with invasive cancer. White arrows designate the residual sessile serrated polyp, whereas yellow arrows indicate the ulcerated malignant portion of the lesion.
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The USMSTF suggests that persons are up-to-date with screening and have negative prior screening tests, particularly colonoscopy, consider stopping screening at age 75 years or when life expectancy is <10 years (Weak; Low Quality of Evidence).

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Table 3. Frequently Asked Questions from Patients to Enhance Colorectal Cancer Quality

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<td>4. What is your overall lesion rate?</td>
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<td>6. Is effective bowel preparation required that at least half the bowel preparation be ingested on the day of the colonoscopy?</td>
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Table 4. USMSTF Ranking of Current Colorectal Cancer Screening Tests

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<tr>
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<th>Tier 2:</th>
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<tr>
<td></td>
<td>FIT-fecal DNA every 3–5 years</td>
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<td>Flexible sigmoidoscopy every 10 or every 5 years</td>
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| Tier 3: | Capsule colonoscopy every 5 years |

Available tests not currently recommended:
- Septin9
- FIT-fecal DNA

Specific Screening Tests
- Colonoscopy: Advantages include high sensitivity for cancer and all classes of precancerous lesions, single-session diagnosis and treatment, and long intervals between examinations in subjects with normal examinations. Disadvantages include the need for thorough bowel cleansing, a higher risk of perforation relative to other screening tests, higher risk of aspiration pneumonitis, a small risk of splenic injury requiring splenectomy, and a greater risk of post-procedural bleeding compared with other screening tests. A major disadvantage of colonoscopy is operator dependence in performance.

- FIT: Advantages include its non-invasive, 1-time sensitivity for cancer of 79%, fair sensitivity for advanced adenomas and low 1-time cost. Disadvantages include the need for repeated testing, M & T considers FIT an essential element of the CRC screening armamentarium of all practitioners.

- FTE: Advantages include the highest single-time sensitivity for cancer of any non-invasive, non-imaging CRC screening test. The major disadvantages of the FIT-fecal DNA test are a substantial decrease in specificity and high cost relative to FIT. Annual FIT is more effective and less costly than FIT-fecal DNA every 3 years.

- CT colonoscopy: Advantages include a lower risk of perforation compared with colonoscopy and sensitivity of 92% to 93% for adenomas ≥3mm in size. Disadvantages include the use of bowel preparation. The sensitivity for polyps <3mm is less than colonoscopy and detection of flat and serrated lesions are major deficiencies of CT colonoscopy. Evidence that CT colonoscopy reduces CRC incidence or mortality is lacking.

- Flexible Sigmoidoscopy: Advantages include disproportionally lower cost and risk compared with colonoscopy, a more limited bowel preparation, and no need for sedation. Disadvantages include a lower benefit in protection against right-sided colon cancer compared with colonoscopy.

- Capsule Colonoscopy: Advantages of capsule colonoscopy are the achievement of endoscopic imaging without an invasive procedure and avoiding the risks of colonoscopy. Disadvantages are that the bowel preparation is more extensive than that for colonoscopy. Also, most patients with positive studies will require re-preparation and colonoscopy on a separate day.

- Septin9 Advantage of Septin9 assay is that it is a serum assay and it is at least potentially more convenient for patients. Disadvantages of the Septin9 assay are the markedly inferior performance characteristics compared with FIT, including lower sensitivity for cancer, inability to detect advanced adenomas and low cost-effectiveness relative to other screening tests.

Table 5. USMSTF Recommendations for Persons With High-Risk Family Histories Not Associated With Polyposis Syndromes

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Colonoscopic or an advanced precancerous lesion in a single first-degree relative at ≥40 years or no two first-degree relatives at any age

Begin screening at age 40 years—tests and intervals are per average-risk screening recommendations. (Table 6)
1. What is your adenoma detection rate?
2. Does the report include photographs of the end of the colon, including the appendiceal orifice and ileocecal valve/terminal ileum?
3. Is the bowel preparation quality described?
4. What is your cecal intubation rate?

- Septin 9
- CT colonography every 5 years
- Annual fecal immunochemical test
- Flexible sigmoidoscopy every 10 years (or every 5 years)

**Tier 3:**

- Septin 9: Advantage of Septin9 assay is that it is a serum assay and is more cost-effective than colonoscopy. Disadvantages include the markedly inferior performance characteristics compared with colonoscopy.
- Capsule Colonoscopy: Advantages of capsule colonoscopy are the non-invasive nature and lower cost compared with colonoscopy, although the results are lower in sensitivity compared with CT colonography.
- CT colonography: Advantages include high sensitivity for polyps ≥1 cm in size, allowing for effective cancer screening. Disadvantages include the invasive nature and high cost compared with other screening methods.
- Flexible Sigmoidoscopy: Advantages include high sensitivity for polyps <1 cm in size, allowing for effective cancer screening. Disadvantages include the invasive nature and lower cost compared with other screening methods.
- FIT: Advantages include easy to use and cost-effective, allowing for easy integration into practice. Disadvantages include lower sensitivity compared with other screening methods.
- FIT-fecal DNA: Advantages include the highest single-time sensitivity for cancer screening. Disadvantages include the need for repeated testing.

CT colonography: Advantages include high sensitivity for polyps ≥1 cm in size, allowing for effective cancer screening. Disadvantages include the invasive nature and high cost compared with other screening methods.

Flexible Sigmoidoscopy: Advantages include high sensitivity for polyps <1 cm in size, allowing for effective cancer screening. Disadvantages include the invasive nature and lower cost compared with other screening methods.

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Table 3. Frequently Asked Questions From Patients to Enhance Colorectal Cancer Quality

1. What is your adenoma detection rate?
2. What is your cecal intubation rate?
3. Do you use split-dosing of bowel preparations?

Table 4. USMSTF Ranking of Current Colorectal Cancer Screening Tests

Table 5. USMSTF Recommendations for Persons With High-Risk Family Histories Not Associated With Polyp Syndromes

Specific Screening Tests

- **Colonoscopy**: Advantages include high sensitivity for cancer and all classes of precancerous lesions, single-session diagnosis and treatment, and long intervals between examinations in subjects with normal examinations. Disadvantages include the need for thorough bowel cleansing, a higher risk of perforation relative to other screening tests, higher risk of aspiration pneumonitis, a small risk of splenic injury requiring splenectomy, and a greater risk of post-procedural bleeding compared with other screening tests. A major disadvantage of colonoscopy is operator dependence in performance.

- **FIT**: Advantages include its non-invasive, 1-time sensitivity for cancer of 79%, fair sensitivity for advanced adenomas and low 1-time cost. Disadvantages include the need for repeated testing, MStP considers FIT an essential element of the CRC screening armamentarium of all practitioners.

- **Flexible Sigmoidoscopy**: Advantages include the highest single-time sensitivity for cancer of any non-invasive, non-imaging CRC screening test. The major disadvantages of the FIT-fecal DNA test are a substantial decrease in specificity and high cost relative to FIT. Annual FIT is more effective and less costly than FIT-fecal DNA every 3 years.

- **CT colonography**: Advantages include a lower risk of perforation compared with colonoscopy and sensitivity of 82% to 92% for adenomas ≥1cm in size. Disadvantages include the use of bowel preparation. The sensitivity for polyps ≥1cm is less than colonoscopy and detection of flat and serrated lesions are major deficiencies of CT colonography. Evidence that CT colonography reduces CRC incidence or mortality is lacking.

- **Flexible Sigmoidoscopy**: Advantages include disproportionally lower cost and risk compared with colonoscopy, a more limited bowel preparation, and no need for sedation. Disadvantages include a lower benefit in protection against right-sided colon cancer compared with colonoscopy.

- **Capsule Colonoscopy**: Advantages of capsule colonoscopy are the achievement of endoscopic imaging without an invasive procedure and avoiding the risks of colonoscopy. Disadvantages are that the bowel preparation is more extensive than that for colonoscopy. Also, most patients with positive studies will require re-preparation and colonoscopy on a separate day.

- **Septin9**: Advantages of Septin9 assay are the markedly inferior performance characteristics compared with FIT, including lower sensitivity for cancer, inability to detect advanced adenomas and low cost-effectiveness relative to other screening tests.

Visit qaco.org/guidelinapp to learn about the AGA Clinical Guidelines App. Available for download on the iTunes and Google Play Store.

**Abbreviations**
- AGA, American Gastroenterological Association; CRC, colorectal cancer; FIT, fecal immunochemical test; USMSTF, U.S. Multi-Society Task Force on Colorectal Cancer

**Disclaimer**
- This Guideline attempts to define principles of practice that should produce high-quality patient care. It is applicable to specialists, primary care, and providers at all levels. This Guideline should not be considered exclusion of other methods of care reasonably directed at achieving the same results. The ultimate judgment concerning the propriety of any course of conduct must be made by the clinician treating the affected individual or age 40, whichever is earlier.